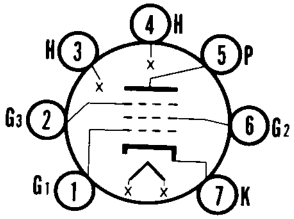


SYLVANIA TYPE 7543



7BK

HUM CRITERIA

The hum level at the plate averages 1.2 millivolts when used as a normal voltage amplifier with a stage gain of 340 and the 6.3 Vac heater supply balanced to ground for minimum hum.

The stage gain of 340 is obtained with a supply voltage of 250 volts, a plate resistor of 270,000 ohms, a grid No. 2 resistor of 680,000, a grid No. 1 resistor of 100,000 ohms, a cathode resistor (bypassed) of 1000 ohms and a following stage loading resistor of 10 megohms. (Loading resistance of VTVM.)

When utilizing the R-C data specified, removal of the cathode bypass condenser will reduce the hum level at the plate to 0.9 millivolts and the stage gain to 110.

MECHANICAL DATA

Bulb	T-5½
Base	E7-1, Miniature Button 7-Pin
Outline	5-2
Basing	7BK
Cathode	Coated Unipotential
Mounting Position	Any

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage	6.3 Volts
Heater Current	300 Ma
Heater-Cathode Voltage (Design-Center Values)	
Heater Negative with Respect to Cathode	
Total D C and Peak	200 Volts Max.
Heater Positive with Respect to Cathode	
D C	100 Volts Max.
Total D C and Peak	200 Volts Max.

DIRECT INTERELECTRODE CAPACITANCES

	Shielded[1]	Unshielded
Pentode Connection		
Grid No. 1 to Plate	.0035	.0035 μμf Max.
Input: g1 to (h+k+g2+g3+I.S.)	5.5	5.5 μμf
Output: p to (h+k+g2+g3+I.S.)	5.0	5.0 μμf
Triode Connection[2]		
Grid to Plate: g1 to (p+g2+g3+I.S.)	2.6	2.6 μμf
Input: g1 to (h+k)	3.2	3.2 μμf
Output: p+g2+g3+I.S. to (h+k)	8.5	1.2 μμf

RATINGS (Design-Center Values)

	Triode Conn.[2]	Pentode Conn.
Plate Voltage	250	300 Volts Max.
Grid No. 2 Supply Voltage		300 Volts Max.
Grid No. 2 Voltage	See Rating Chart	
Plate Dissipation	3.2	3.0 Watts Max.
Grid No. 2 Dissipation		0.65 Watts Max.
Positive Grid No. 1 Voltage	0	0 Volts Max.

CHARACTERISTICS AND TYPICAL OPERATION

	Triode Conn.[2]	Pentode Connected		
Plate Voltage	250	100	250	250 Volts
Grid No. 3 Voltage		Connected to Cathode at Socket		
Grid No. 2 Voltage		100	125	150 Volts
Cathode Bias Resistor	330	150	100	68 Ohms
Plate Current	12.2	5.0	7.6	10.6 Ma
Grid No. 2 Current		2.1	3.0	4.3 Ma
Transconductance	4800	3900	4500	5200 μmhos
Amplification Factor	36			
Plate Resistance (approx.)		0.5	1.5	1.0 Megohms
Ec1 for Ib = 10 μa (approx.)		−4.2	−5.5	−6.5 Volts

NOTES:

1. Shield No. 316 connected to Cathode Pin No. 7.
2. When operated as a triode Grid No. 2 and Grid No. 3 should be tied to the plate.

   See Resistance Coupled data section (Chart XXI) for R-C data. See Type 6AU6 for curve information.

APPLICATION

The Sylvania Type 7543 is designed to provide low hum, non-microphonic operation through the incorporation of a helical wound heater and rigid mounting of the internal components.
The 7543 is otherwise similar to, and a replacement for, the Type 6AU6.